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The PROGRESSIVE FARMER is the Official Organ of the North Carolina Farmers' State Alliance.

PRACTICAL FARM NOTES.

Written for The Progressive Farmer by the Editor, and Guy E. Mitchell.

An article of unusual merit is that which we present to our readers this week from the pen of Prof. J. M. Johnson, Assistant Agriculturist of the North Carolina Agricultural Experiment Station. We are sure that by giving it a little thought and acting upon his best judgment, the average farmer will find this article alone worth the price of a year's subscription to The Progressive Farmer. Read it and "think it over." Prof. Johnson's suggestions as to rape growing will be welcomed by those interested in this crop, while his statement of the value of peas and rape when fed in connection with corn should be carefully studied by all who have hogs to fatten. It is evident that the present system of feeding corn alone is a very wasteful one.

On page 8 Prof. Emery answers a number of questions relating to live stock, and on this page is a valuable article on "Small Grain."

A digestion experiment of the Kansas Station shows that alfalfa ranks at the top of feeds containing a large amount of digestible protein. One hundred pounds of alfalfa hay contains 11.3 pounds more digestible matter than the same amount of red clover hay and 1 1/2 times as much protein. It contains only 2.3 pounds less of total digestible nutrients than the same amount of millet hay, and almost 2 1/2 times as much digestible protein. It contains 2 1/2 times as much digestible protein as oat hay; three times as much as prairie hay; more than four times as much as sorghum hay; five times as much as corn fodder; 6 1/2 times as much as cat straw and 13 times as much as wheat straw.

In feeding value, alfalfa hay not only ranks high above all other feeds used for roughage, but it is well up among the more concentrated feeds. One hundred pounds of it contains 3.3 pounds more of total digestible nutrients than wheat bran, and almost as much protein. It is richer in digestible protein than wheat, corn, oats, rye, barley, Kaffir corn or sorghum seed.

Its digestible nutrients have a nutritive ratio of 1 to 4.4. There are only a few feeds, such as wheat bran, linseed meal, cottonseed meal and soy beans that furnish as narrow a nutritive ratio as this. Alfalfa hay, therefore, is an ideal feed to use in balanced rations, and is especially valuable to combine with corn as a ration for fattening steers, since it furnishes all the roughage necessary and is also a cheap source of protein. It is an ideal dairy feed, furnishing almost the exact nutritive ratio required for the highest yields of milk. It is highly valuable as a hog food. Two very helpful articles on alfalfa growing will appear in next week's Progressive Farmer.

Many wealthy Americans are great travelers. How many of them though, are a distinct benefit to their country by reason of their traveling? One man who feels that he can combine the pleasure of globe trotting with the good of agricultural exploration is Mr. Barbour Lathrop, of Chicago. Mr. Lathrop himself does not profess to be an agricultural expert, but in his wanderings he has associated with him, Mr. D. G. Fairchild, the brilliant young

FARM AFFAIRS.

VALUABLE HINTS TO SOUTHERN FARMERS.

The Assistant Agriculturist of the N C Experiment Station Makes Some Suggestions Deserving Special Thought and Attention

Correspondence of The Progressive Farmer.

The interest shown by many of the representative farmers of this State in better stock, better and larger crops and in increasing and preserving the natural fertility of the soil is indicative of an all around improvement.

The tendency is to import less of the necessities of life and produce more at home. In this our meat supply is of the very utmost importance. The fact that for so many years past we have continued to send beyond the borders of our State for bacon and beef is to our discredit. But the awakening, so plain to be seen, to this condition of affairs and the determination shown in some quarters to apply the remedy of growing more at home is not to be ashamed of.

With the great variety of grain and forage crops doing so well in the South, "Dixie land" should be an exporter rather than an importer of nearly all meat, dairy and poultry products. The hog has done more than perhaps any other animal to remove the mortgages from farms in the Ohio and Mississippi valleys. It will do as much for the plantations of the South whenever the owners and cultivators thereof give him the proper degree of encouragement and assistance.

To produce cheap pork a variety of cheap and nutritious foods is essential. True it is that fat pigs may be grown on a grain diet of corn alone, but this single diet does not make the cheapest or best pork. Corn is rich in starch or heat and fat producers and rather poor in protein or fish and muscle and lean meat makers. Experimental feeding indicates that for the very best results in pork production the food should contain from 5 to 7 pounds of starch (carbohydrate) substances to 1 of the protein or lean meat making elements. Corn contains these substances in the proportion of 9.7 of the former to 1 of the latter, consequently it does not give the cheapest and best pork when fed alone. Peas on the other hand are by far too poor in the starchy elements and too rich for best results in proteins, containing as they do about 3.1 pounds of the former to one of the latter substances.

The natural fault or defect of either of the separate grains mentioned above may be corrected by mixing the two in equal parts by weight, or if peas are expensive and corn is relatively cheap, one part of peas by weight and two of corn may be used to advantage. The Alabama Experiment Station found that when corn was fed alone it required 487 pounds of grain to make 100 pounds increase in weight in a lot of Essex pigs. When peas were used alone 481 pounds of grain produced 100 pounds increase. But when corn and peas were combined in equal parts by weight 453 pounds of the mixture produced 100 pounds increase, pigs uniform in age and breeding being employed in these trials. This is a gain of not less than 10 per cent. in the feeding value of the grains by mixing them. The trouble and expense of harvesting the peas and shelling the corn and mixing them may be avoided by allowing the hogs to graze the pea field when the peas are mature and throwing some ear corn to the hogs in the field each day.

Rape, which is a plant belonging to the same general family as the cabbage, cauliflower, kale and so forth, promises to be of great service as a forage crop to be grazed off by sheep and hogs during late fall, winter and early spring. This plant is rich in protein, which with its succulent nature and cooling action on the digestive organs, make it of great value when corn or other heating grains form the bulk of the grain allowance for the breeding, growing or fattening swine.

Experiments at the Wisconsin Experiment Station show that hogs having the run of .93 acre of rape pasture in addition to which they ate 3,606 pounds of corn and 1,799 pounds of wheat middlings produced 1,919 pounds of grain, while it required 5,202 pounds of corn 2,595 pounds of wheat middlings without the rape to produce 1,933 pounds of increase on hogs of same age and breeding. Or in other language, with them an acre of rape

pasture had a feeding value equivalent to 600 pounds of the mixture by weight of corn two parts and wheat mid dings one.

The North Carolina farmer cannot hope to get near such high feeding value from a given area in rape. But as land and labor costs much less here than further North, the return from a given cash outlay would not be against the Southern man. Trials at the North Carolina Experiment Station farm for several years past and at the College farm during the past spring show that rape is a valuable crop for both hogs and sheep in this section.

Rape is a cool weather plant, and therefore is of value to this State as a mid-summer or early fall crop. But if planted on well prepared land late in September or early October and not grazed while very young or while the ground is frozen or very wet it will furnish good pasturage from the middle of November to the middle of May or first of June.

Larger yields will be secured by planting two or three pounds of seed per acre in rows from two feet to thirty inches apart and thin the plants to from two to three inches apart in the row. It should be cultivated often enough while young to keep the surface soil fine and free from weeds, but as soon as the plants are large enough to shade the ground cultivation should cease until the crop is grazed off early in the spring. Then the use of a fine toothed cultivator will hasten the growth for later spring grazing.

If a smaller yield is sufficient compensation for less work and pains in cultivating the soil may be prepared in the fall just as for a crop of turnips then sow from three to five pounds of rape seed per acre. Cover the seed with a rake or light drag after which no cultivation will be required.

Rape is a rank feeder requiring a rather moist, but not swampy, rich soil for its best development. It will not give satisfactory yields on thin, poor or hard soils. It consumes much of the soil nitrogen and therefore it had better form a part of a crop rotation in which peas or clover occupy a prominent place.

The Dwarf Essex and the Victoria are the only varieties at this time which may be safely cultivated.

Our advice to the farmer is to try rather a small field in rape the first year then as its habits of growth and uses become better known the probability of loss from larger crops will not be nearly so great.

J. M. JOHNSON.

Experiment Farm, Raleigh, N. C.

SMALL GRAIN.

An Experienced Farmer Makes Some Suggestions.

Correspondence of The Progressive Farmer.

Wheat, oats, rye and barley are usually called small grain. They all belong to the grass family. They constitute the chief articles of food for the human family as well as the domestic animals.

Wheat and rye are sources of bread, and barley is useful in many ways. Oats furnish the best grain food for horses, as well as some very nourishing dishes for man.

In this country, wheat stands easily at the head of breadstuffs, Indian corn being next in rank. In this article we shall speak of wheat mainly, for as a rule the same treatment will hold good for the others. There is no good reason why the Southern farmers should buy any of the small grains or their products. It is much more economical to grow them. We lay it down as a safe farm maxim, "That it is not good business for a farmer to buy what his soil will produce." There are some exceptions growing out of the farmer's capacity. If he does not know how to grow any particular crop, he had better pay the penalty of his ignorance by hiring somebody who does know to grow that particular crop for him. But we can grow wheat almost anywhere, and we should do so.

HOW TO PREPARE FOR IT.

We say emphatically, break the soil deep, and the subsoil too, if it is hard and dry. Wheat roots will grow four and a half feet down into the earth, if given a chance to do so. Thus you see you furnish so much more feeding room for the plants by plowing deep. Soil broken 12 inches furnishes about ten times the feeding space it does when broken only four. You ask how this is done. Just this way: When you plow only four inches, there is a hard layer of earth, called hard-pan,

which practically prevents the roots from growing through and limits them to four inches. But when the plow breaks twelve inches, it gets below this hard pan, and permits the roots to reach the porous earth below, and go on down as deeply as they wish to go. As we have stated above, in such cases they will grow about four feet or forty eight inches. Four divides into forty-eight twelve times. Thus we see the importance of deep breaking.

But there is another great gain. Plants are largely water; and cannot grow without water. The deep preparation enables the roots to reach the earth water, almost always abundant a few feet below. The four inch preparation does not do this. Hence, every little drouth injures the shallow plowing, but not the deep soil. Thus we have great gain, both in the food and water supply by deep preparation.

CLOVER AND PEAS.

But the mechanical and chemical condition of the soil, for growing the small grain can be greatly improved by having grown a crop of pea vines or clover before the small grain. Either of these crops gather nitrogen from the atmosphere, and store it in available form in the soil. They also penetrate the soil deeply in all directions with roots which rot quickly, and leave the earth loose and filled humus. Just in the best possible condition for small grain to do its best. The shading, the decaying stubble, the porous soil and moisture consequent give a warm root bed through the cold winter. Thus winter killing is largely prevented, and vigorous growth promoted. Repeated vigorous harrowing will now complete the mechanical condition.

SEEDING AND FERTILIZING.

Select some good sound seed, already acclimated, clear of foreign pests of all kinds. Soak well in a solution of blue-stone so as to kill fungi spores and microbes. Sow one bushel per acre. If put in the proper depth—about one and a half inches—this will give as many plants as an acre should have. Sow with a drill if you can. If you cannot, then by hand, and plow in as above, one and a half to two inches. Use through the drill or spread broadcast four hundred or more pounds per acre of acid phosphate and muriate of potash (or kainit) mixed thus, 400 pounds acid phosphate, muriate of potash 130 pounds (or kainit 400 pounds).

This is needed to give health to the plants and fullness to the grain. The clover and pea vines will have furnished all the needed ammonia. Now roll the soil firm, and then run over with a smoothing harrow so as to prevent crusting, and you are ready to await results. And the results will not disappoint you. Particularly will this be true, if you have selected the right time to sow. Here in the South, this time is from the 20th of September to the 1st of November.

Later will not make the largest yields or the heaviest grains. Wheat is a biennial, needing the fall season of one year to make the roots, and the spring season of the next year to produce the tops and the grain. If the rooting season has been cut short, the spring yield will be cut short, and vice versa.

J. B. HUNNICUTT.

THE ROUND BALE SYSTEM.

It would seem that the Farm and Ranch was lacking in original matter on the "round bale," since it has to copy from the Commercial Appeal, Mr. Clement's praise of the American Company's press—the round bale. Readers will observe, however, that Mr. Clements is a cotton ginner and that he in no sense goes into the merits of this question, the monopolistic feature which denies him, and all other ginners, the privilege of buying the press he so lavishly praises.

In fact Mr. Clements is simply ren- ing the American Company press, on which he last year "compressed about 4,000 bales," and with which he is so delighted that he intends to "abandon his old press entirely."

For a man who is happy with the present, and looks not into the future, Mr. Clements is a striking example.

It has never occurred to him that "there'll come a time" when other ginners like himself shall have abandoned their old presses, that he and they will then be at the mercy of the promoters of the round bale system, who in carrying out their declared purpose of refusing to sell their presses, will then own the press department of every gin in the country.

Mr. Clements has shown that the round bales netted from \$2.50 to \$3.75 more than the square bale; but will this liberality continue any longer than when this bonus has effectually and completely driven from the field the old press machinery? What right have we to suppose that the round bale people will continue to pursue the same liberal policy they now pursue in the face of competition, when competition is destroyed? The question is not how liberal the round bale people can be, because of the economy of their system, but how liberal will they be? Ordinary business knows no sentiment; then, can we expect monopoly to be less remorseless?

Not to make this article too long, I want to notice some phases of this question which are not permitted to come to the surface, and of which the general reader is ignorant to his own hurt.

In the first place, I want the reader to know that not every farm journal or newspaper is open to a discussion of the round bale except at "advertising rates." This, the writer has found out by experience. In reply to a communication the editor of a farm journal, which is now giving space to the advantages of the American Company's press, informed me that my article was withheld from publication until they could inform me that it could only appear at "advertising rates." As I had no pecuniary interest in gins or compresses whatever, but only desired to discuss the principles involved, which it seemed to me were clearly detrimental to the cotton planter, I immediately wrote for the return of my article, which is scheduled to appear in this week's issue of the Greenville Headlight and Independent Farmer. I merely mention this that the reader of these eulogistic articles in praise of the round bale which appear as regular reading matter, may know that they are, in reality, advertisements in disguise, paid for at advertising rates. The evil and the dishonesty of the thing is, that the reader is taken unawares. If the Company's name appeared to them, they would lose more than half their force; in fact, the object is that they shall appear as disinterested testimony in favor of the round bale, and the monopolistic methods of its promoters.

In all that this writer says, he does not want to be understood as disparaging in any way the round bale; he is fighting the monopolistic principle its promoters seek to fasten upon the cotton industry, in their absolute refusal to sell their presses under any circumstances whatever. And this principle ought to be fought, as every kind of monopoly is fought, by every paper that makes any pretense of being on the side of the people.

This Company, the American round bale, has already been compelled to make concessions. What it refused in the beginning it consents now to give for the people. This is not guaranteed any longer, however, than to 1900. At first the demand was that the farmer must sell them his cotton in the seed. They refused, in fact, to convert the farmer's cotton into a merchantable article and turn it back to him in the bale that he might dispose of it when and wherever he pleased. Whenever the producer of any of the great staple products, such as wheat, corn and cotton, cannot have the privilege of having them converted into merchantable articles; his grain threshed, his corn shelled, and all turned back to him to dispose of at his pleasure, because monopoly has seized the country, and refuses to do anything but buy the raw material, and there is no one else to buy it but them, serfdom, for the great toiling millions, is not far off.

Such is the principle under which the promoters of the round bale started out; that they have temporarily abandoned a part of the scheme, is not due to a more lenient consideration for the cotton planter, but to the pressure of public opinion, while yet the power to do what they want to do is not completely in their hands.

It is in the power of the cotton rais-

[CONTINUED ON PAGE 8.]